The following data represents the math lab time (hours) that students spent the week before a final exam.

6, 4, 8, 5, 4, 6, 8

1. Determine the mean. **Tenths**
2. Determine the variance. **Tenths**
3. Determine the standard deviation. **Tenths**
4. Use the 95% confidence level to estimate the margin of error associated with estimating the true mean. **Hundredths**
5. Use the 95% confidence interval to estimate the true mean study time. **Tenths**
6. Use the 95% confidence level to estimate the true variance. **Tenths**
7. Use the 95% confidence level to estimate the true standard deviation. **Tenths**

8. A $ 30,000 life insurance policy for a 28-year old male costs $ 1,600 per year. If the probability of a 28-year old male living to see 29 years of age is 0.98, compute the expected value for the insurance policy. **Hundredths**

A couple decides to have 8 children. What is the probability of having?
9. No boys? **Thousandths**
10. One boy? **Thousandths**
11. Two boys? **Thousandths**
12. At least one boy? **Thousandths**
13. No more than two boys? **Thousandths**
14. What's the expected number of boys? **Tenths**

The lifespan of a laptop is normally distributed with a mean of 5.5 years and a standard deviation of 1.8 years. What percent of laptops last:
15. At least 4 years? **Hundredths**
16. Less than 7 years? **Hundredths**
17. Between 4 and 7 years? **Hundredths**
18. More than 8 years? **Hundredths**
19. What lifespan represents the top 5%? **Tenths**
20. What lifespan represents the 3rd Quartile? **Tenths**

When reviewing health records, a sample of size 150 indicates that 30% of Americans over the age of 45 suffer from type II diabetes. Use the 90% confidence level to:

21. Estimate the margin of error. **Thousandths**

22. To estimate the true proportion. **Thousandths**

US Senators- The following table displays 100 senators of the 112th US congress viewed by political party affiliation and gender.

	Male	Female	Total
Democrat	39	12	51
Republican	42	5	47
Independent	2	0	
Total	83	17	100

If a person is selected at random, what's the probability the person:

23. is a democrat? **Thousandths**

24. is a republican? **Thousandths**

25. is a non-republican? **Thousandths**

26. democrat or a republican? **Thousandths**

27. Is a republican given that the person is a male? **Thousandths**

28. is a republican given that the person is a female? **Thousandths**

29. Which sex is more likely to be a republican?

30. If you select two different senators at random, what's the probability both are male republicans? **Thousandths**

The mean age of people who acquire a driver's license is at least 28 years with a standard deviation of 2.8 years, as claimed by the DMV. A sample of 65 applicants report a mean age of 26.2 years with a standard deviation of 2.6 years. Use the 1% level of significance to answer the following questions.

31. What is claim?

32. What are the critical value(s)? **Hundredths**

33. What is the test statistic? **Hundredths**

34. What is your decision?

The proportion of students who graduate from college in 4-years is not 35%, as claimed as by the US Department of Education. A sample of 180 college students indicate that 55 graduated in 4 years. Use the 10% level of significance to answer the following questions:

35. What is the claim?

36. What are the critical, value(s)? **Hundredths**

37. What is the test statistic? **Hundredths**

38. What is your decision?
39. What is your name?

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